I. AMENDMENTS

In the claims:

1. (currently amended): An expression cassette comprising,

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a polynucleotide encoding luciferase *luxA, luxB, luxC, luxD* and *luxE* gene products arranged in the following relative order 5' - *luxA-luxB-luxC-luxD-luxE-* 3', wherein (a) transcription of the polynucleotide results in a polycistronic RNA encoding all the gene products; (b) each of the *luxA, luxB, luxC, luxD* and *luxE* gene products is expressed as an individual polypeptide; and (c) polynucleotide sequences comprising Gram-positive ribosome-binding site sequences are located 5' to all of said *lux* coding sequences.

2. (original): The expression cassette of claim 1, further comprising a multiple-insertion site located 5' to said *luxA, luxB, luxC, luxD* and *luxE* coding sequences.

3. (original): The expression cassette of claim 1, wherein at least one Gram-positive ribosome binding site comprises the sequence presented as SEQ ID NO:1.

4. (original): The expression cassette of claim 1, wherein the coding sequences of the gene products are derived from *Photorhabdus luminescens*.

5. (original): The expression cassette of claim 1, wherein the polynucleotide further comprises a promoter located 5' to all of said *lux* coding sequences wherein transcription of the polynucleotide results in a polycistronic RNA encoding all the *lux* gene products.

6. (original): The expression cassette of claim 5, wherein said promoter is contained in an Expression Enhancing Sequence selected from the group consisting of Sa1, Sa2, Sa3, Sa4, Sa5, and Sa6.

7. (original): The expression cassette of claim 5, wherein said promoter is contained in an Expression Enhancing Sequence selected from the group consisting of Sp1, Sp5, Sp6, Sp9, Sp16 and Sp17.

8. (original): The expression cassette of claim 7, wherein said promoter is contained in Expression Enhancing Sequence Sp16.

9-20. (canceled)

21. (currently amended): An expression cassette comprising,

a polynucleotide encoding luciferase *luxA, luxB*, and *luc* gene products, wherein (a) transcription of the polynucleotide results in a polycistronic RNA encoding all three gene products, (b) polynucleotide sequences comprising Gram-positive ribosome-binding site

sequences are located adjacent the 5' end of the luxA coding sequences, adjacent the 5' end of the luxB coding sequences, and adjacent the 5' end of the luc coding sequences, and (c) each of the *luxA, luxB,* and *luc* gene products is expressed as an individual polypeptide.

22. (original): The expression cassette of claim 21, wherein said polynucleotide further encodes *luxC, luxD* and *luxE* gene products, wherein (i) Gram-positive ribosome-binding site sequences are located 5' to each of the *luxC, luxD,* and *luxE* coding sequences, and (ii) each of the *luxC, luxD, and luxE* gene products is expressed as an individual polypeptide.

23. (canceled)

24. (original): The expression cassette of claim 21, wherein the polynucleotide further comprises a promoter located 5' to all of said *lux* and *luc* coding sequences wherein transcription of the polynucleotide results in a polycistronic RNA encoding all the *lux* and *luc* gene products.

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25. (original): The expression cassette of claim 24, wherein said promoter is contained in an Expression Enhancing Sequence selected from the group consisting of Sa1, Sa2, Sa3, Sa4, Sa5, and Sa6.

26. (original): The expression cassette of claim 24, wherein said promoter is contained in an Expression Enhancing Sequence selected from the group consisting of Sp1, Sp5, Sp6, Sp9, Sp16 and Sp17.

27. (original): The expression cassette of claim 26, wherein said promoter is contained in Expression Enhancing Sequence Sp16.

28. (currently amended): The expression cassette of claim ~~21~~ 22, further comprising a multiple-insertion site located 5' to said *luxA, luxB, luc, luxC, luxD* and *luxE* coding sequences.

29. (original): The expression cassette of claim 21, wherein the coding sequences for *luxA* and *luxB* are obtained from *Photorhadus luminescens.*

30-33. (canceled).

34. (original): The expression cassette of claim 1, wherein the expression cassette is contained within a bacterial transposon.

35. (original): The expression cassette of claim 1, wherein the expression cassette is contained within a bacterial mini-transposon.

36. (original): The expression cassette of claim 1, wherein the coding sequences of the gene products comprise codons that are optimal for expression of the gene products in a host system into which the expression cassette is to be introduced.

37-48. (canceled)

49. (original): A shuttle vector comprising:
an expression cassette according to claim 1;
a polynucleotide encoding a selectable marker;
a Gram-positive origin of replication; and
a Gram-negative origin of replication.

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50-55. (canceled)

56. (original): A method of modifying a Gram-positive organism to produce light, comprising transforming the Gram-positive organism with an expression cassette according to claim 1.

57. (canceled)

58. (original) A method of screening an analyte for its ability to affect expression of a reporter marker, comprising:

providing the analyte to Gram-positive bacteria comprising the luciferase expression cassette of claim 1, wherein said reporter marker comprises luciferase; and

monitoring the effect of the analyte on the ability of the Gram-positive bacteria to produce light, thereby identifying whether the analyte affects expression of the reporter in Gram-positive bacteria.

59-63. (canceled)

64. (original) A Gram-positive bacteria comprising an expression cassette according to claim 1.

65-68. (canceled).

69. (currently amended): The expression cassette of claim ~~21~~ 22, wherein the arrangement of the coding sequences for the *lux* gene products is in the following relative order 5' - *luxA-luxB-luxC-luxD-luxE*- 3'.

70. (previously added): The expression cassette of claim 21, wherein the expression cassette is contained within a bacterial transposon.

71. (previously added): The expression cassette of claim 21, wherein the expression cassette is contained within a bacterial mini-transposon.

72. (previously added): The expression cassette of claim 21, wherein the coding sequences of the gene products comprise codons that are optimal for expression of the gene products in a host system into which the expression cassette is to be introduced.

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73. (previously added): A shuttle vector comprising:
an expression cassette according to claim 21;
a polynucleotide encoding a selectable marker;
a Gram-positive origin of replication; and
a Gram-negative origin of replication.

74. (previously added): A Gram-positive bacteria comprising an expression cassette according to claim 21.

75. (previously added): A bacteria comprising the vector of claim 49.

76. (previously added): A bacteria comprising the vector of claim 73.

77. (previously added): A method of modifying a Gram-positive organism to produce light, comprising transforming the Gram-positive organism with an expression cassette according to claim 21.

78. (previously added): The method of claim 77 further comprising providing the substrate required for *luc*-mediated luciferase activity.

79. (currently amended): A method of screening an analyte for its ability to affect expression of a reporter marker, comprising:

providing the analyte to Gram-positive bacteria comprising the luciferase expression cassette of claim 21, wherein said reporter marker comprises luciferase;

providing ~~one or more substrates~~ a substrate required for luciferase light production; and

monitoring the effect of the analyte on the ability of the Gram-positive bacteria to produce light, thereby identifying whether the analyte affects expression of the reporter in Gram-positive bacteria.

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80. (currently amended): The method of claim 79, wherein said ~~one or more substrates comprise~~ substrate comprises an aldehyde, and said aldehyde is provided as a vapor.

81. (currently amended): The method of claim 79, wherein said ~~one or more substrates comprise~~substrate is a substrate for the *luc* gene product.

82. (currently amended): The method of claim 79, wherein said ~~one or more substrates comprise~~ substrate comprises (i) an aldehyde, wherein said aldehyde is provided as a vapor, and (ii) a substrate for the *luc* gene product.

83-86. (withdrawn)